Jet Propulsion Laboratory
California Institute of Technology

AIRS Science Team Meeting

Science Processing System Status

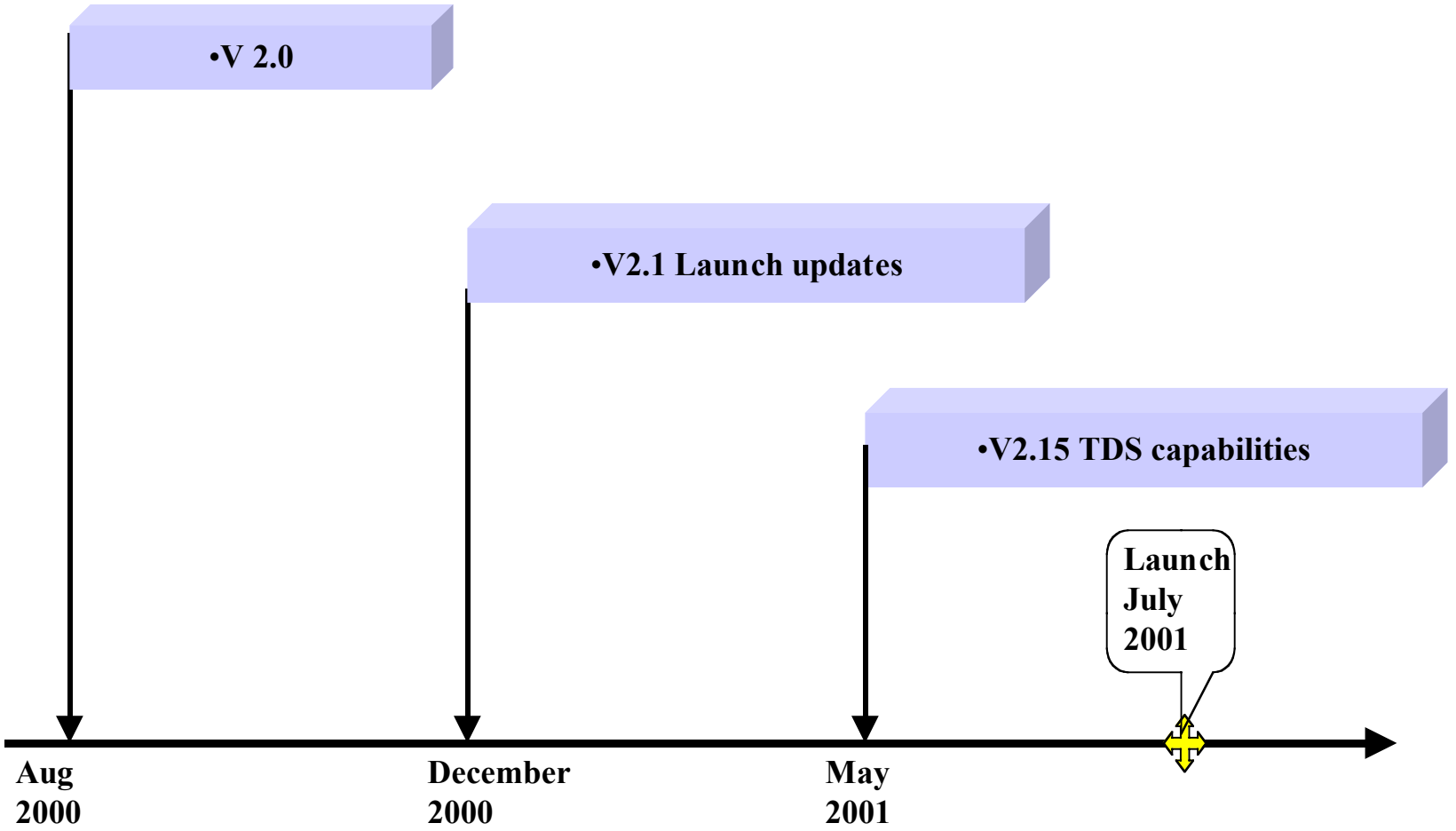
Navid Dehghani

February 21,2001

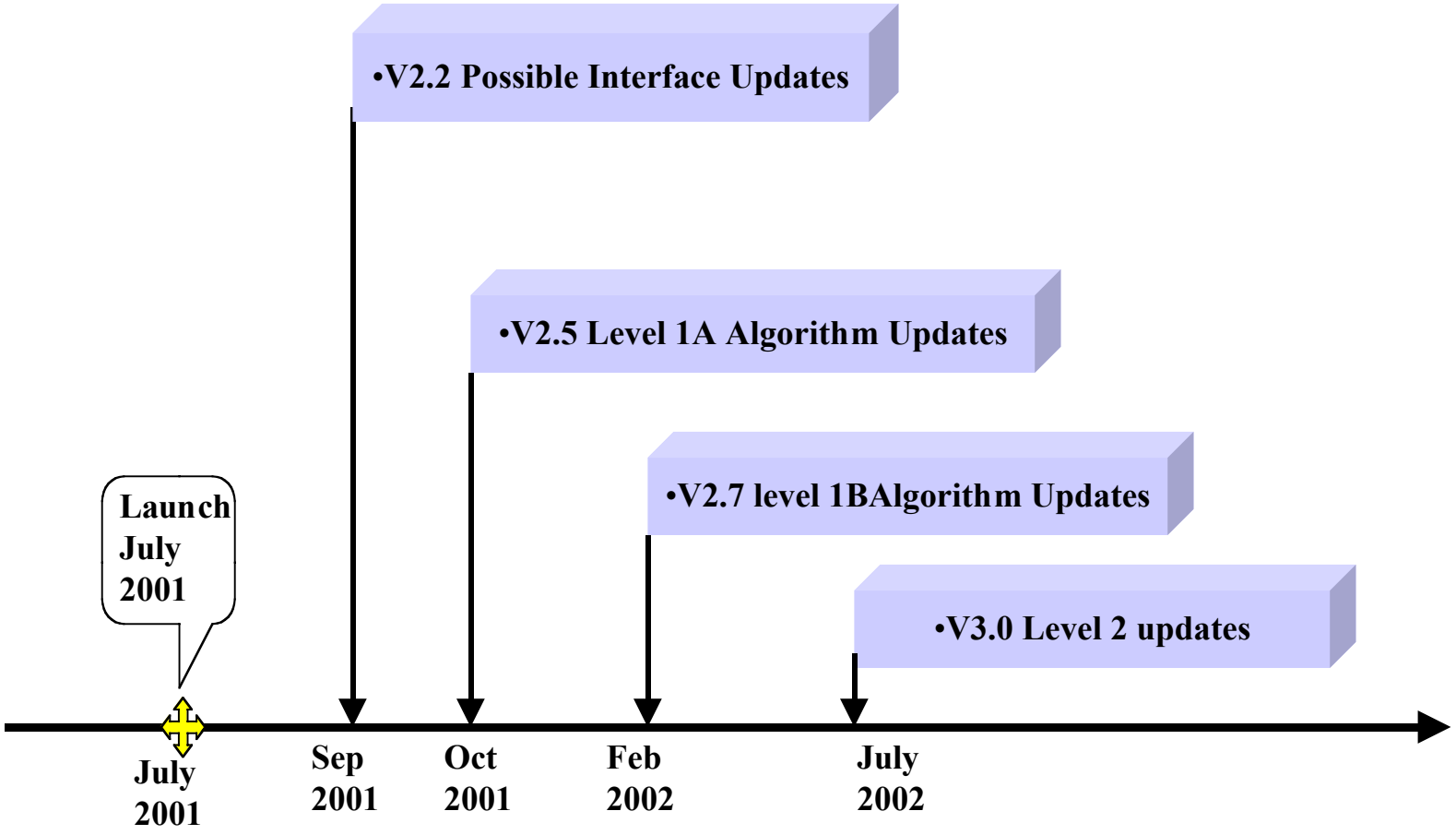
Agenda

- Status
  - Product Generation System (PGS) at the GSFC DAAC
  - TLSCF Data System at JPL
- Matchup processing
- A Data System's view of the Science Team Exercise
- Software Delivery Policy
- Access to Data
  - From the TDS at JPL
  - From the GSFC DAAC
    - Dave Gregorich
    - George Serafino

Pre Launch Schedule



Post Launch Schedule



Status - L1A

- HSB timing
- AMSU timing
- AIRS adjust of delta t to synchronize with AMSU start scan time
- Will be tested with data from Thermal Vac. Test currently scheduled to start in mid-March.
- Implemented polynomial based DN to EU algorithm
- Implemented new decommutation format with new identifiers
- Geolocation updates and validation - handling south pole topography and used 9-km DEM to speed up the process especially at pole regions.

Status - L1BIR

- Newly defined quality flags are implemented.
- New calibration algorithms as defined in the "Level 1B Infrared Algorithm, QA, and Post Processing Requirements" document published in December 2000 is being implemented.
  - This capability is scheduled to be available for testing at TDS in June-July, 01.

Status - L2

- Tuning coefficients (Larry McMillan, by end of March)
- Regression error estimates (Mitch Goldberg, ??)
- Modified version is being implemented to process matchup files.

Status - Matchup

- Completed the development of the matchup processing for PREPQC files.
- Generalized the design to perform matchup processing for ARM/CART and Surface Marine truth files.
- Developing readers/converters for each truth type.
- L2 - Developing the capability to process truth matchup files.

Status - TDS

- First version is on schedule for delivery by end of February:
  - Operational scenario approved and signed.
  - Requirements and design documents reviewed and approved.
  - File ingestion subsystem was tested in the MOSS-2 test.
- Second version (launch ready) is scheduled for delivery in May-June, 2001.
  - Detailed schedule has been developed.
  - External dependencies have been identified and are in the process of being addressed.

Status - Summary

- Completed test and integration of V2.1 at JPL and handed over the system to Mike Theobald at the GSFC DAAC.
- V2.1.5 (final pre-launch version) is on schedule for delivery in May, 2001.
- TDS is progressing as planned and will be ready to support the May-June science team exercise.

Matchup processing - Surface Marine Data

- Surface Marine
  - Denise Hagan downloads these on a daily basis (about 50,000 observations/day).
  - A “thinning” algorithm, applied by Denise, reduces number of observations to 500-800/day. Metadata for ingestion into TDS is generated by Denise.
  - The Thin data set along with metadata is transferred to TDS input FTP area for archiving.
  - TDS production is triggered for extracting truth information into an ASCII truth index file.

Matchup-processing ARM/CART Data

- ARM/CART
  - Eric Fetzer receives these files from Dave Tobin at University of Wisconsin on a daily basis and performs visual quality check of the content.
  - Eric will generate metadata for these files and transfer the data along with metadata to TDS input FTP area for archiving.
  - TDS production is triggered for extracting truth information into an ASCII truth index file.

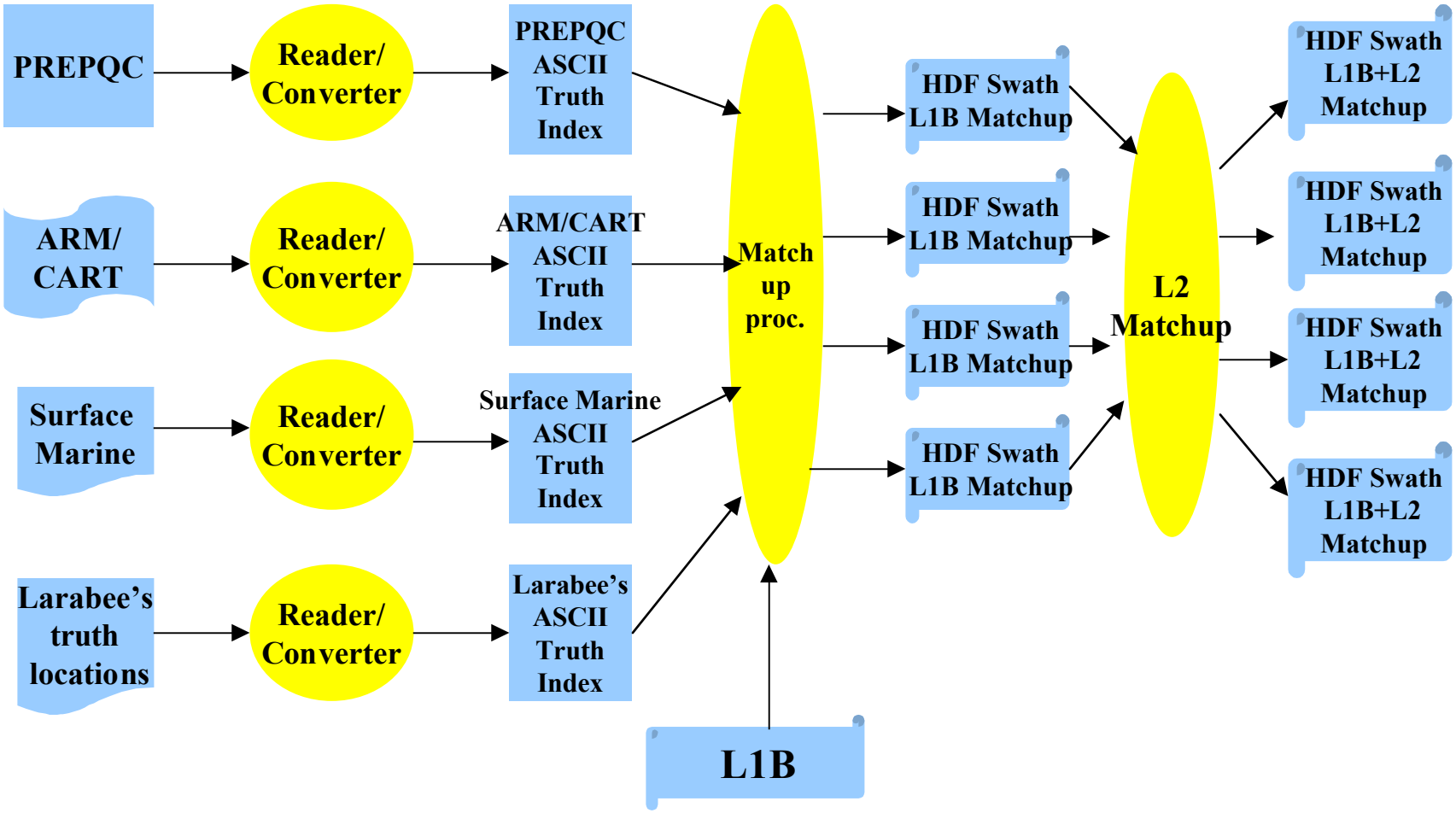
Matchup Processing - PREPQC Data

- PREPQC
  - This is a subscribed data set from GSFC DAAC.
  - JPL nominally receives four files with appropriate metadata per day in HDF swath format in TDS input FTP area for archiving.
  - TDS production is triggered for extracting truth information into an ASCII truth index file.

Matchup Processing - L. Strow's Truth Locations

- L. Strow's Truth Locations
  - Fixed truth spatial information will be received from L. Strow (email).
  - This information is converted into an ASCII truth index file.
  - This truth index file along with metadata is ingested into TDS.
  - TDS production is triggered for extracting truth information into an ASCII truth index file.

Matchup Processing by TDS



Science Team Exercise

- February, 01:
  - Used AVN data to create L1B data. L2 PGE used simulated L1B to create L2 products. Results were then compared to AVN.
  - Due to team exercise time constraints only a subset of data was processed, Granule 401 (with the first scanset of each granule in the day)
  - Modified L2 PGE to work with granule 401. Precipitation had to be disabled, since it requires 3 granules of contiguous data.
  - Good tools (join, unjoin) to manipulate products is available.
  - There were no matchup processing.
  - GSFC data link was not used.
  - Full TDS Capabilities were not ready for this exercise.

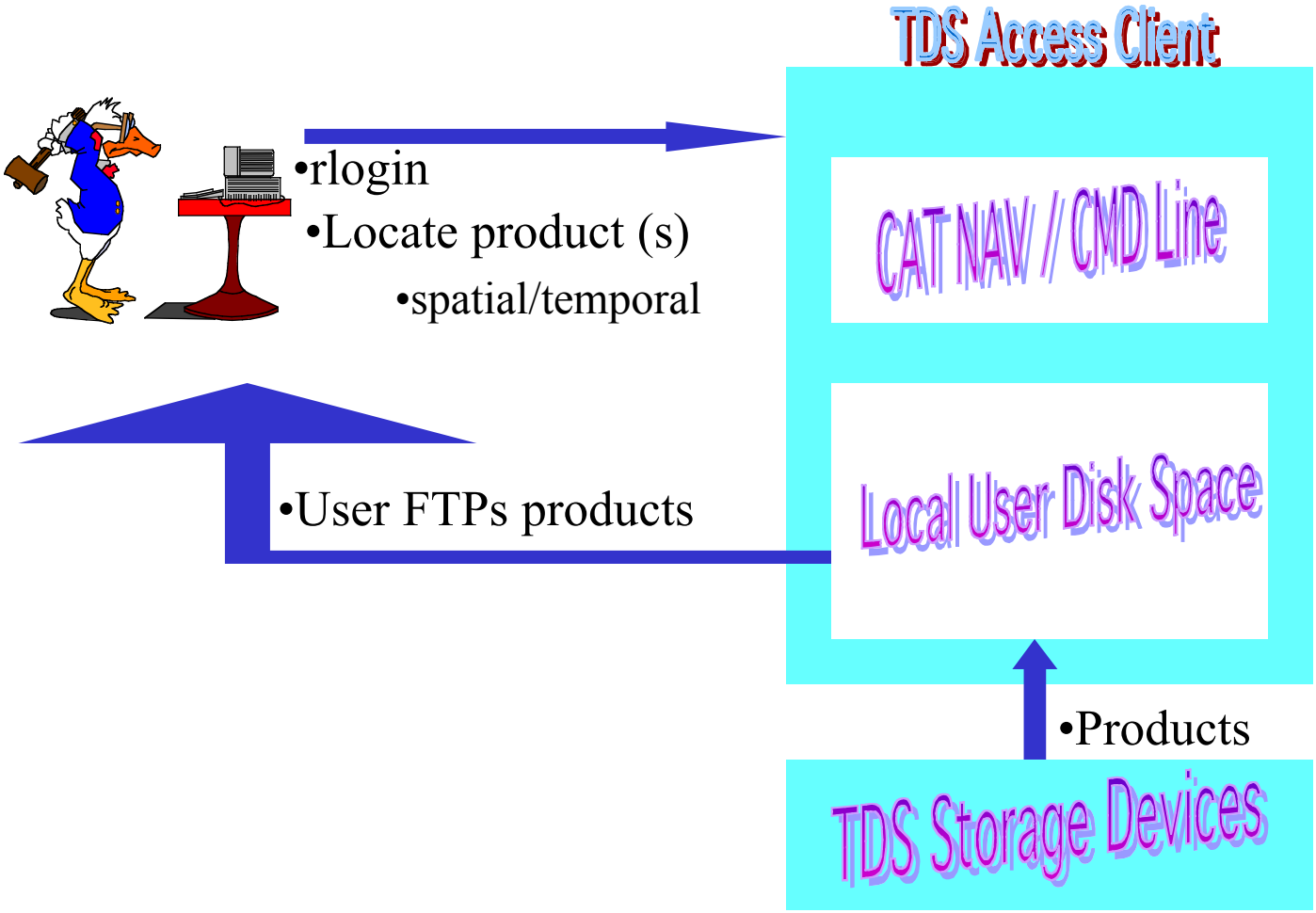
Science Team Exercise

- May-June, 01:
  - Will use AVN to generate L0 data. This will exercise not only L2 PGE, but L1B and L1A PGEs as well.
  - L0 data can be sent to GSFC and then transferred back to TDS in order to fully test all interfaces that will be used during normal operations.
  - TDS capabilities will be available to ingest data and schedule various PGEs to generate products.
  - At least PREPQC will be available for matchup processing.
  - Should realistic instrument noise be simulated?

Accessing AIRS Data

- How to get data from JPL through TDS
- How to get data from GSFC
  - Dave Gregorich, JPL
  - George Serafino, GSFC

Data Retrieval from TDS



Command Line Options

- Specify Search Engine:

  -s airs-dom

  -p 0

- Specify Search Criteria:

  -t L1B_AIRS

  -W 'AutomaticQualityFlag = yes'

- Specify Collection Name:

  -r airs